

FIG. 1

APPROVED	C. G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

```

<CONCEPT NAME= "INFORMATION MODEL" >
  <CONCEPT NAME= "DOCUMENT" >
    <CONCEPT NAME= "STRUCTURED DOCUMENT" >
      <CONCEPT NAME= "XML" />
      <CONCEPT NAME= "SGML" />
    </CONCEPT NAME>
    <CONCEPT NAME= "NON STRUCTURED DOCUMENT" >
      <CONCEPT NAME= "TEXT" />
    </CONCEPT NAME>
  </CONCEPT NAME>
  <CONCEPT NAME= "RELATION" >
    .....
  </CONCEPT NAME>
  <CONCEPT NAME= "OBJECT" >
    .....
  </CONCEPT NAME>
</CONCEPT NAME>

```

FIG. 3

```

<CONCEPT NAME= "INFORMATION OPERATION" >
  <CONCEPT NAME= "SEARCH" />
  <CONCEPT NAME= "STORAGE" />
  <CONCEPT NAME= "PROCESSING" />
  <CONCEPT NAME= "DISTRIBUTION" />
</CONCEPT NAME>

```

FIG. 4

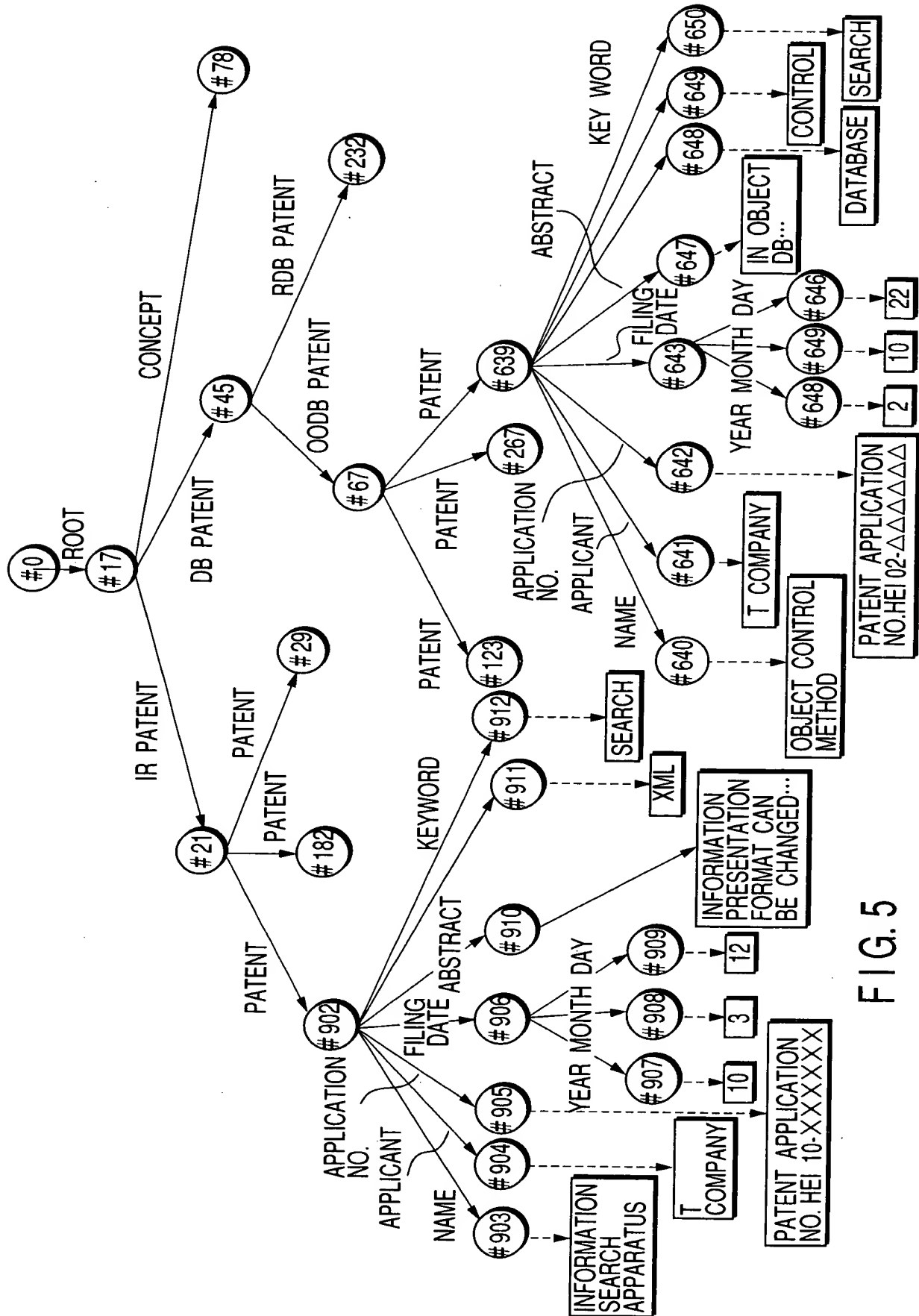


FIG. 5

OFFICE 2000

INSERT "ROOT / IR PATENT"
"PATENT">
<NAME>NFORMATION SEARCH APPARATUS</NAME>
<APPLICANT>T COMPANY</APPLICANT>
<APPLICATION NO>PATENT APPLICATION HEI 10-XXXXXX</APPLICATION NO.>
<FILING DATE>
<YEAR>10</YEAR><MONTH>3</MONTH><DAY>12</DAY>
</FILING DATE>
<ABSTRACT>
TO PROVIDE A DATABASE ALLOWING TO CHANGE AS WILL INFORMATION PRESENTATION FORMAT FROM
THE USER'S VIEWPOINT, TO ENLARGE INFORMATION EXPLOITATION RANGE, AND TO PROMOTE INFORMATION
EXPLOITATION.
</ABSTRACT>
<KEY WORD>XML</KEY WORD>
<KEY WORD>SEARCH</KEY WORD>
</PATENT>"

FIG. 6

APPROVED	C. G. FIG.	
BY	CLASS	SUBCLASS
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```

SELECT
<DOCUMENT>
  <APPLICATION NO.>$x1</APPLICATION NO.>
</DOCUMENT>
WHERE
<*/PATENT>
  <APPLICATION NO.>$x1</APPLICATION NO.>
  <KEY WORD>$x2</KEY WORD>
</PATENT>FROM "ROOT/"
$x2= "SEARCH"

```

FIG. 7

```

SELECT
<DOCUMENT>
  <APPLICATION NO.>$x1</APPLICATION NO.>
</DOCUMENT>
WHERE
<*/PATENT>
  <APPLICATION NO.>$x1</APPLICATION NO.>
  <KEY WORD>$x2</KEY WORD>
</PATENT>FROM "ROOT/"
<CONCEPT NAME= "DOCUMENT" >
  <*/CONCEPT NAME=$x2/>
</CONCEPT NAME>FROM "ROOT/"

```

FIG. 8

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APPROVED	C.G. FIG.	
DY	CLASS	SUBCLASS
DRAFTSMAN		

```

SELECT
  <DOCUMENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <CLASSIFICATION AXIS= "INFORMATION MODEL" >$x3</>
    <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
      $x4</CLASSIFICATION>
  </DOCUMENT>
WHERE
  <*/PATENT>
    <APPLICATION NO.>$x1</APPLICATION NO.>
    <KEY WORD>$x2</KEY WORD>
  </PATENT>FROM "ROOT/"
  <*/CONCEPT NAME= "INFORMATION MODEL" >
    <CONCEPT NAME=$x3>
    <*/CONCEPT NAME=$x2/>
  </CONCEPT >
  </CONCEPT >FROM "ROOT/"
  <*/CONCEPT NAME= "INFORMATION OPERATION" >
    <CONCEPT NAME=$x4>
    <*/CONCEPT NAME=$x2/>
  </CONCEPT >
  </CONCEPT>FROM "ROOT/"

```

FIG. 9

```

<RESULT>
  <DOCUMENT>
    <APPLICATION NO.>PATENT APPLICATION HEI 10-XXXXXXX</APPLICATION NO.>
    <CLASSIFICATION AXIS= "INFORMATION MODEL" >DOCUMENT</CLASSIFICATION>
    <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
      SEARCH</CLASSIFICATION>
  </DOCUMENT>
  <DOCUMENT>
    <APPLICATION NO.>PATENT APPLICATION HEI 09-□□□□□□</APPLICATION NO.>
    <CLASSIFICATION AXIS= "INFORMATION MODEL" >RELATION</CLASSIFICATION>
    <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
      STORAGE</CLASSIFICATION>
  </DOCUMENT>
  <DOCUMENT>
    <APPLICATION NO.>PATENT APPLICATION HEI 10-○○○○○○○</APPLICATION NO.>
    <CLASSIFICATION AXIS= "INFORMATION MODEL" >RELATION</CLASSIFICATION>
    <CLASSIFICATION AXIS= "INFORMATION OPERATION" >
      SEARCH</CLASSIFICATION>
  </DOCUMENT>
</RESULT>

```

FIG. 10

DATE: 2-25-66

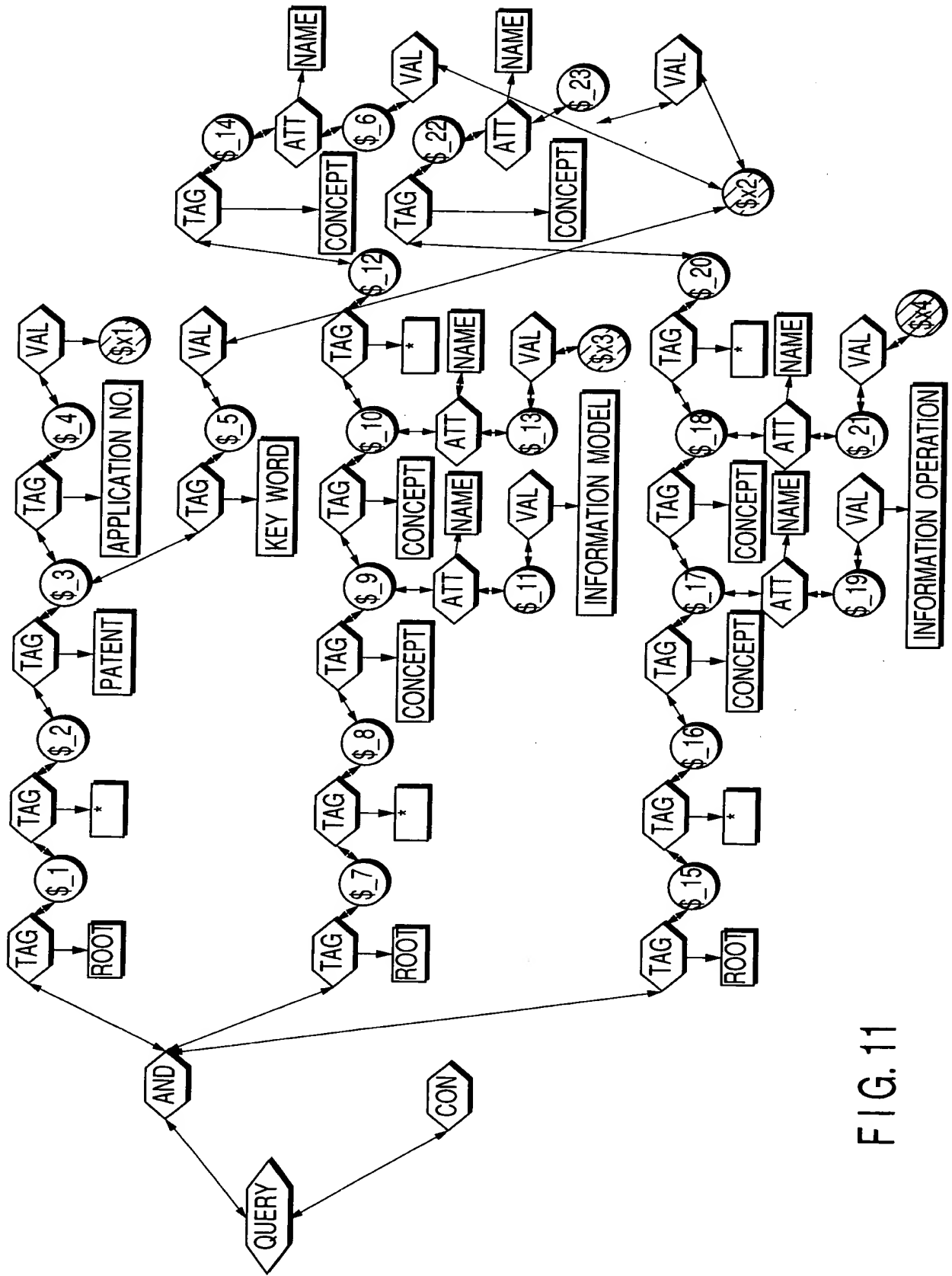


FIG. 11

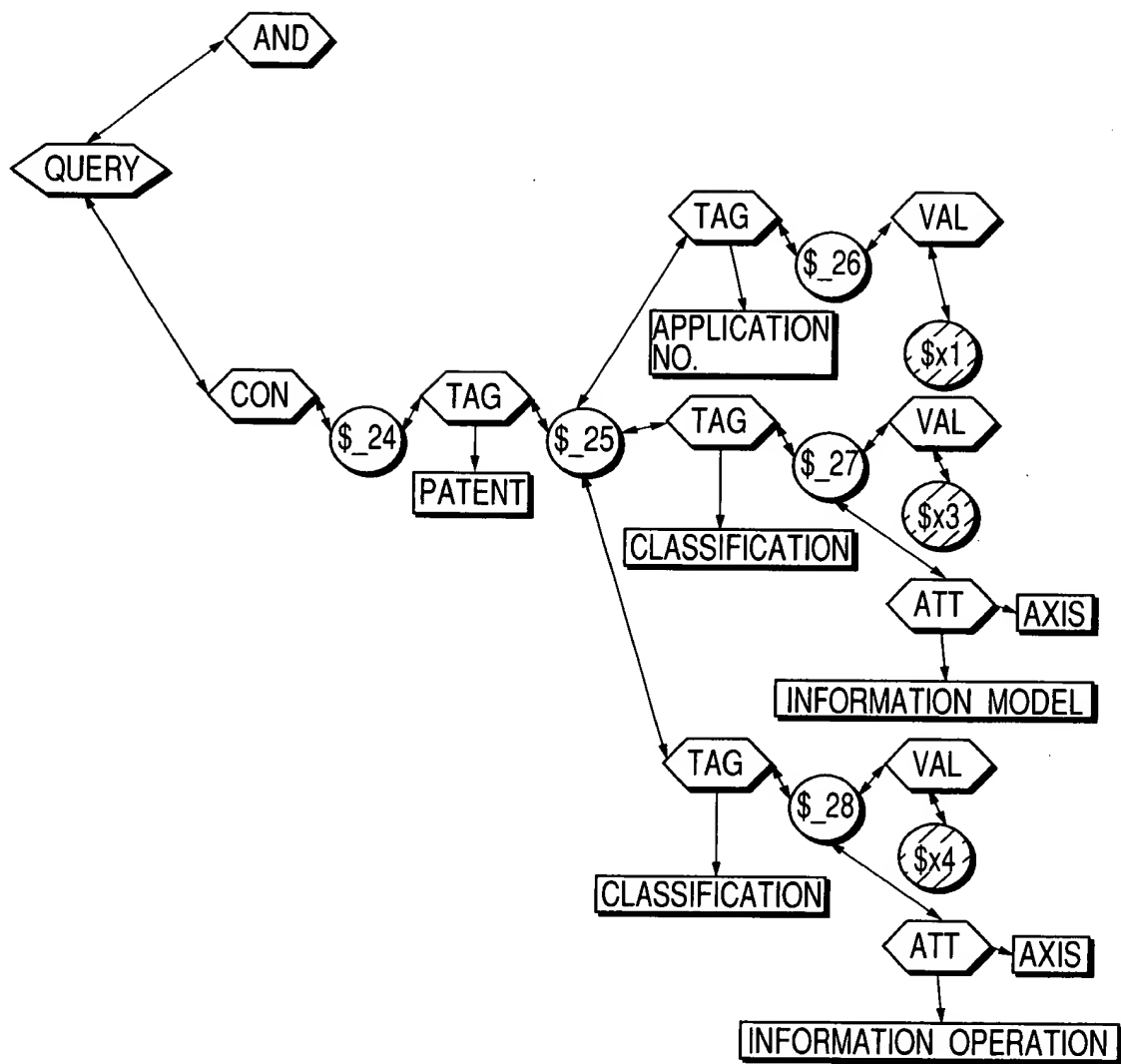


FIG. 12

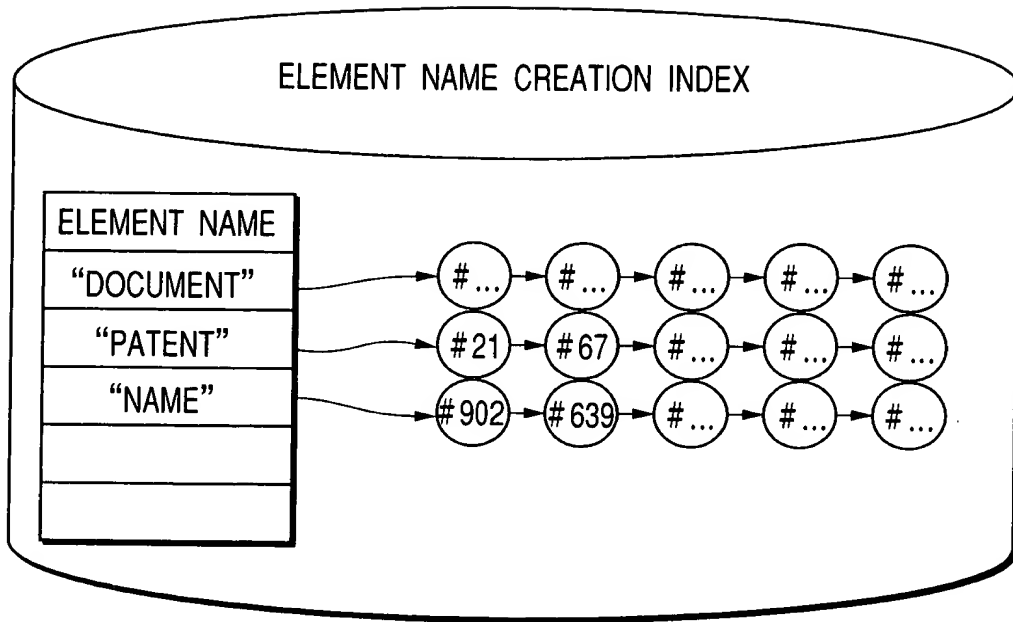


FIG. 13

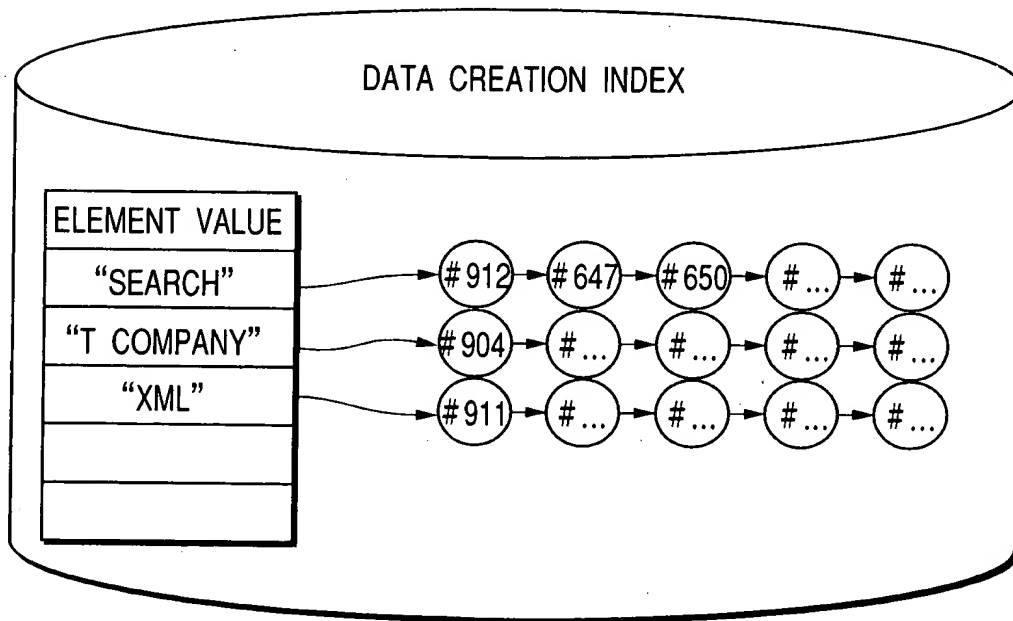


FIG. 14

004477 22911660

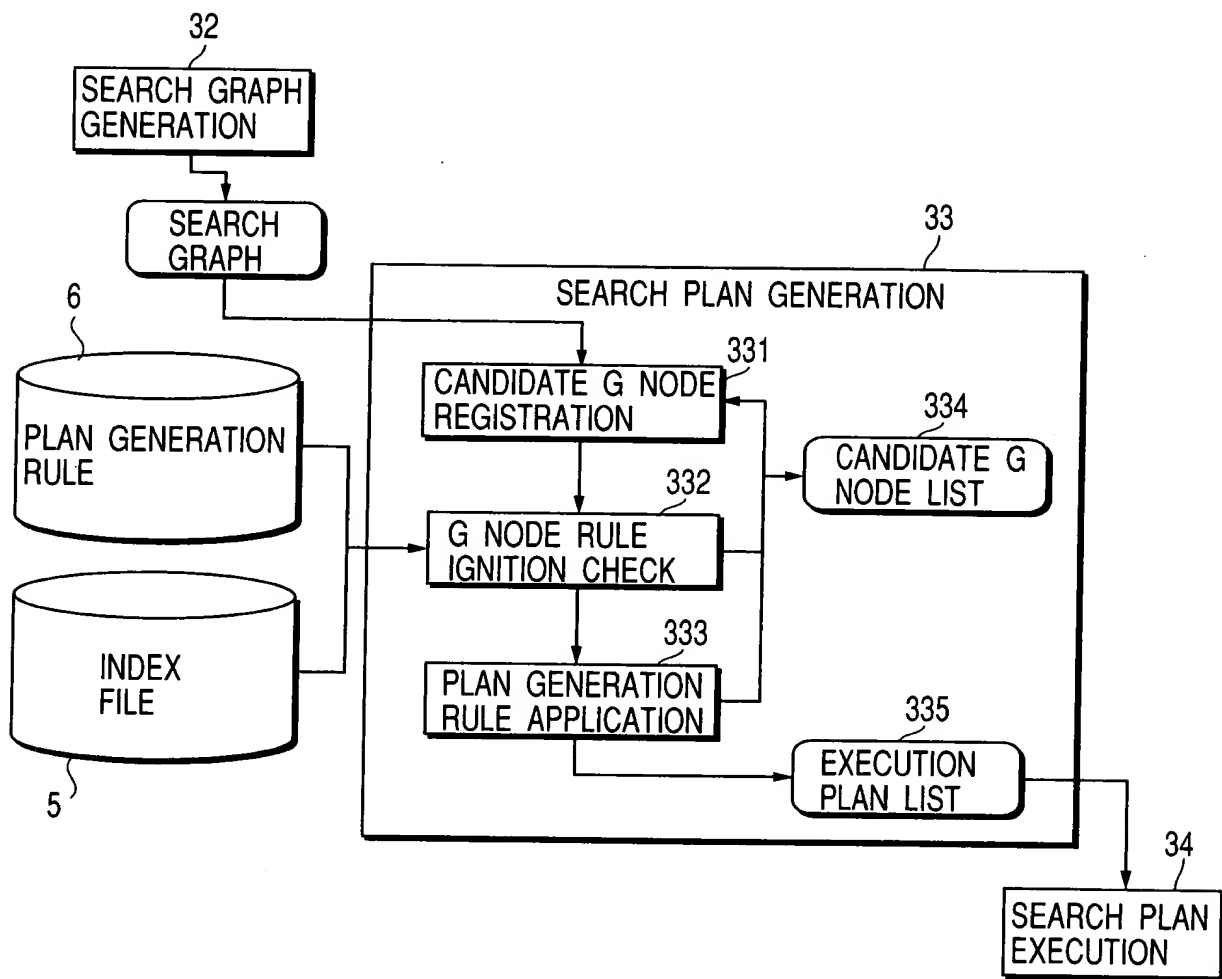


FIG. 15

NO.	G NODE	COST	IF			OTHERS	THEN
			OP1	OP2	OP3		
01	TAG	1.0	AND	M	N	ELEMENT NAME CREATION INDEX EXISTS IN OP2	PATHINST
02	TAG	0.5	M	M	N		PATHEXPAND1
03	TAG	0.2	N	M	N		PATHEXPAND2
04	TAG	0.1	N	M	M	REVERSE HIERARCHIC INDEX EXISTS IN OP3	PATHEXPAND3
05	TAG	0.3	M	M	M	OP2 OF OP1 ADJACENT TAG NODE IS "ROOT"	PATHCHECK
06	TAG	0.6	N	"*"	M		NOP
...							
11	VAR	0.5	M	M			JOIN
...							
21	VAL	0.2	M	N			VALUE
...							
31	CMP	1.0	M	N		DATA INDEX FOR OP2 EXISTS	SELECT
32	CMP	0.1	N	M			FIND
...							
41	AND						
...							

FIG. 16

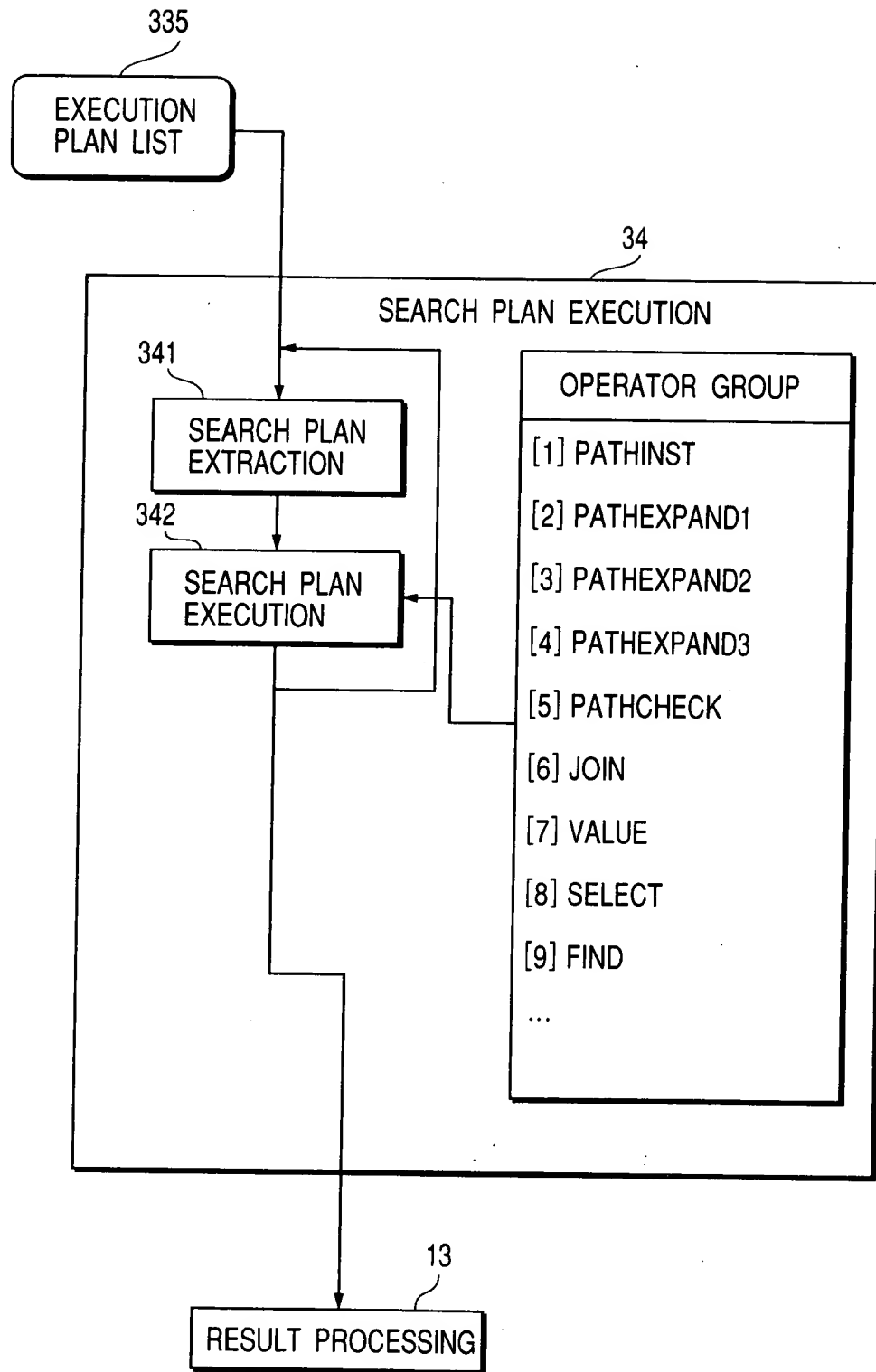


FIG. 17

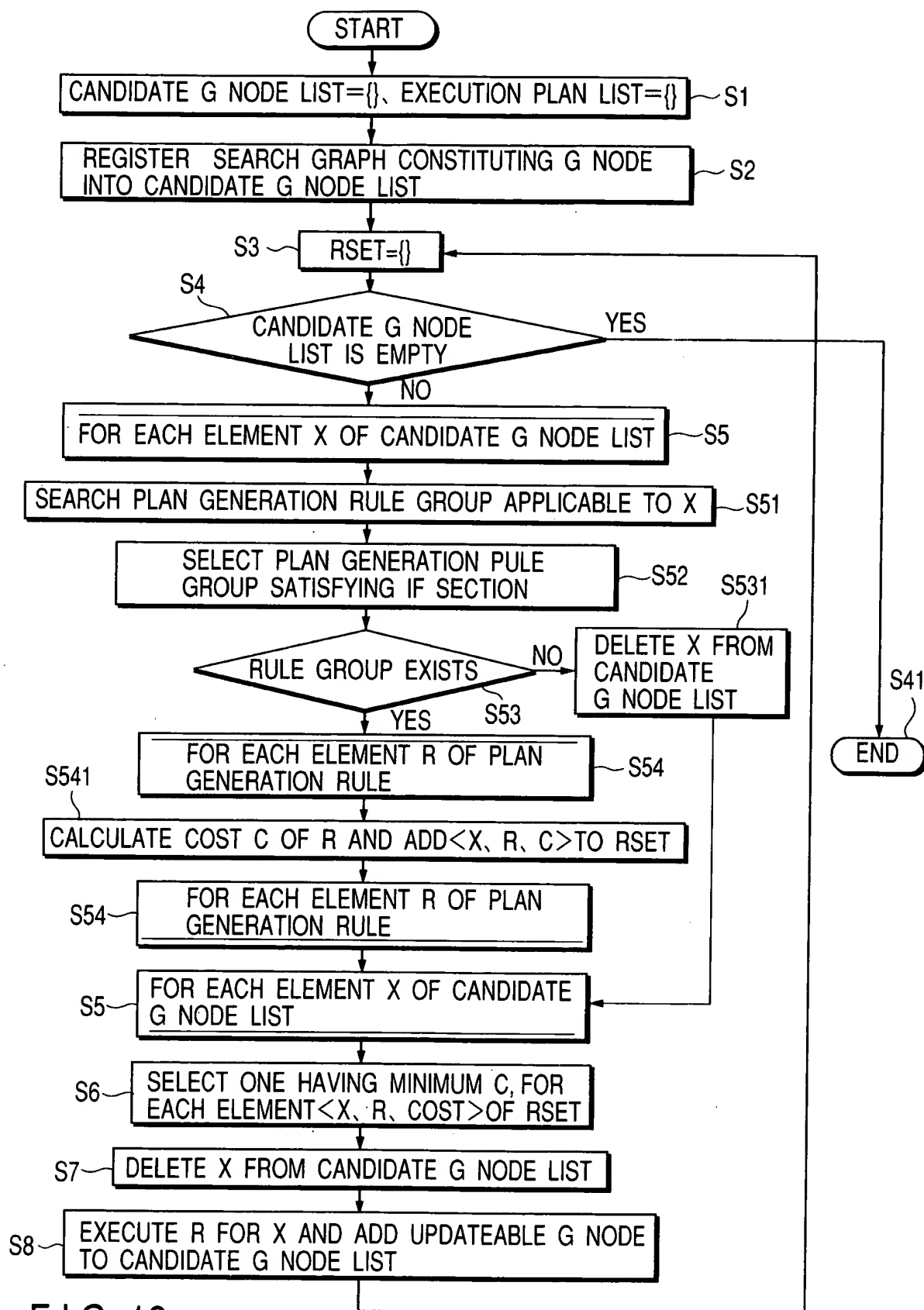


FIG. 18

APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
DATE	FYSMAN	

```

SELECT
  <DOCUMENT>$x</DOCUMENT>
WHERE
  <*/PATENT>
  <NAME>$X</NAME>
  </PATENT>FROM "ROOT/"
  $x LIKE "SEARCH"

```

FIG. 19

STEP	G NODE	RULE NO.	OPERATOR
STEP1	CMP	APPLY RULE 32	FIND
STEP2	TAG	APPLY RULE 03	PATHEXPAND2
STEP3	TAG	APPLY RULE 02	PATHEXPAND1
STEP4	VAL	APPLY RULE 21	VALUE
STEP5	VAR	APPLY RULE 11	JOIN
STEP6	TAG	APPLY RULE 06	NOP
STEP7	CON	APPLY RULE	CONSTRUCT

FIG. 21

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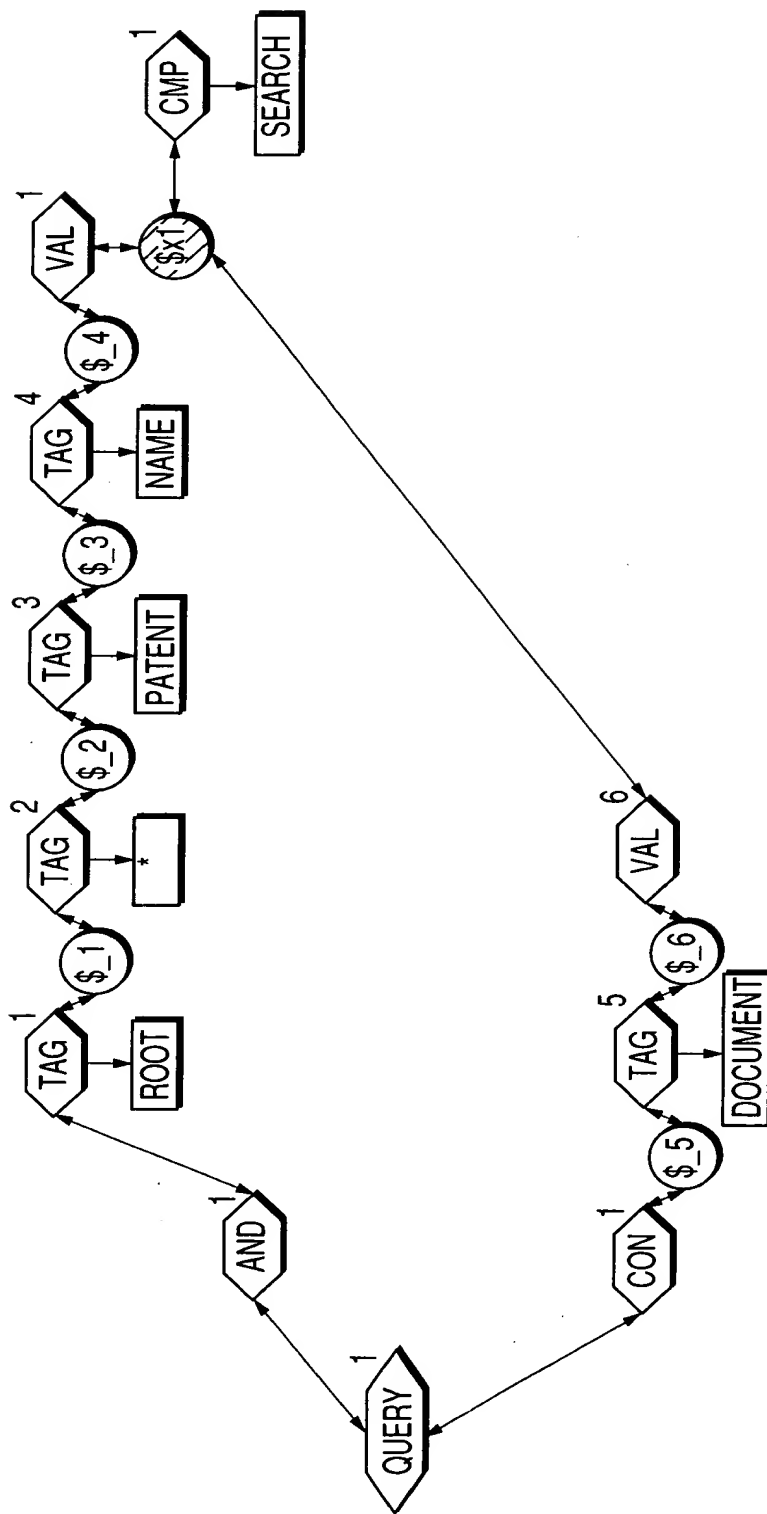


FIG. 20

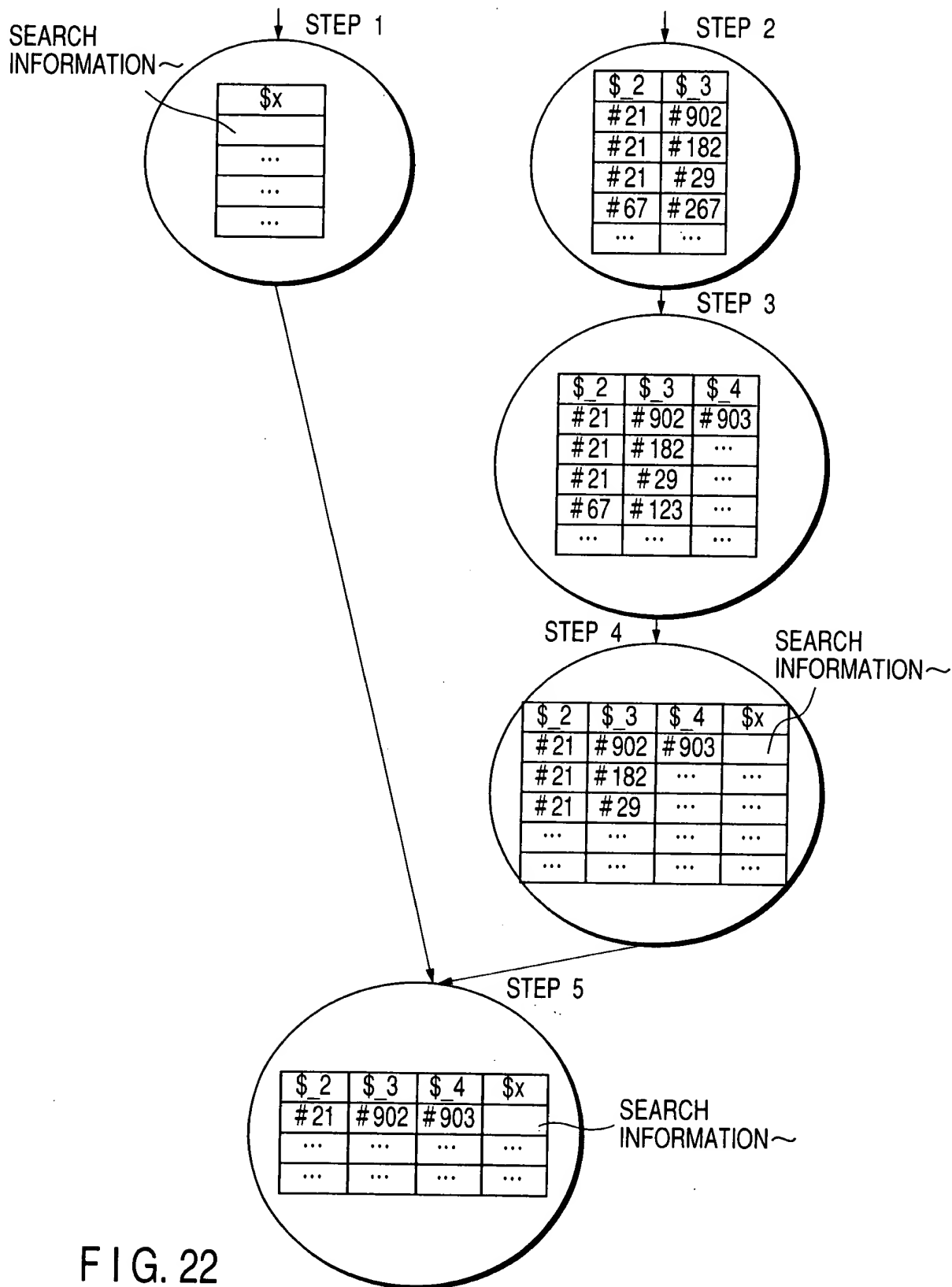


FIG. 22

APPROVED	O.G. FIG.	
BY	CLASS	SUBCLASS
DATE/TIME		

```

<RESULT>
  <DOCUMENT>INFORMATION SEARCH APPARATUS</DOCUMENT>
  <DOCUMENT>DATA SEARCH METHOD</DOCUMENT>
  <DOCUMENT>METHOD FOR SEARCH PROCESSING
    OPTIMIZATION AND SEARCH METHOD</DOCUMENT>
</RESULT>

```

FIG. 23

STEP	G NODE	RULE NO.	OPERATOR
STEP 1	TAG	APPLY RULE 01	PATHINST
STEP 2	TAG	APPLY RULE 02	PATHEXPAND1
STEP 3	TAG	APPLY RULE 02	PATHEXPAND1
STEP 4	TAG	APPLY RULE 02	PATHEXPAND1
STEP 5	VAL	APPLY RULE 21	VALUE
STEP 6	CMP	APPLY RULE 31	SELECT
STEP 7	CON	APPLY RULE	CONSTRUCT

FIG. 24

U.S. PAT. & T.M. OFF.

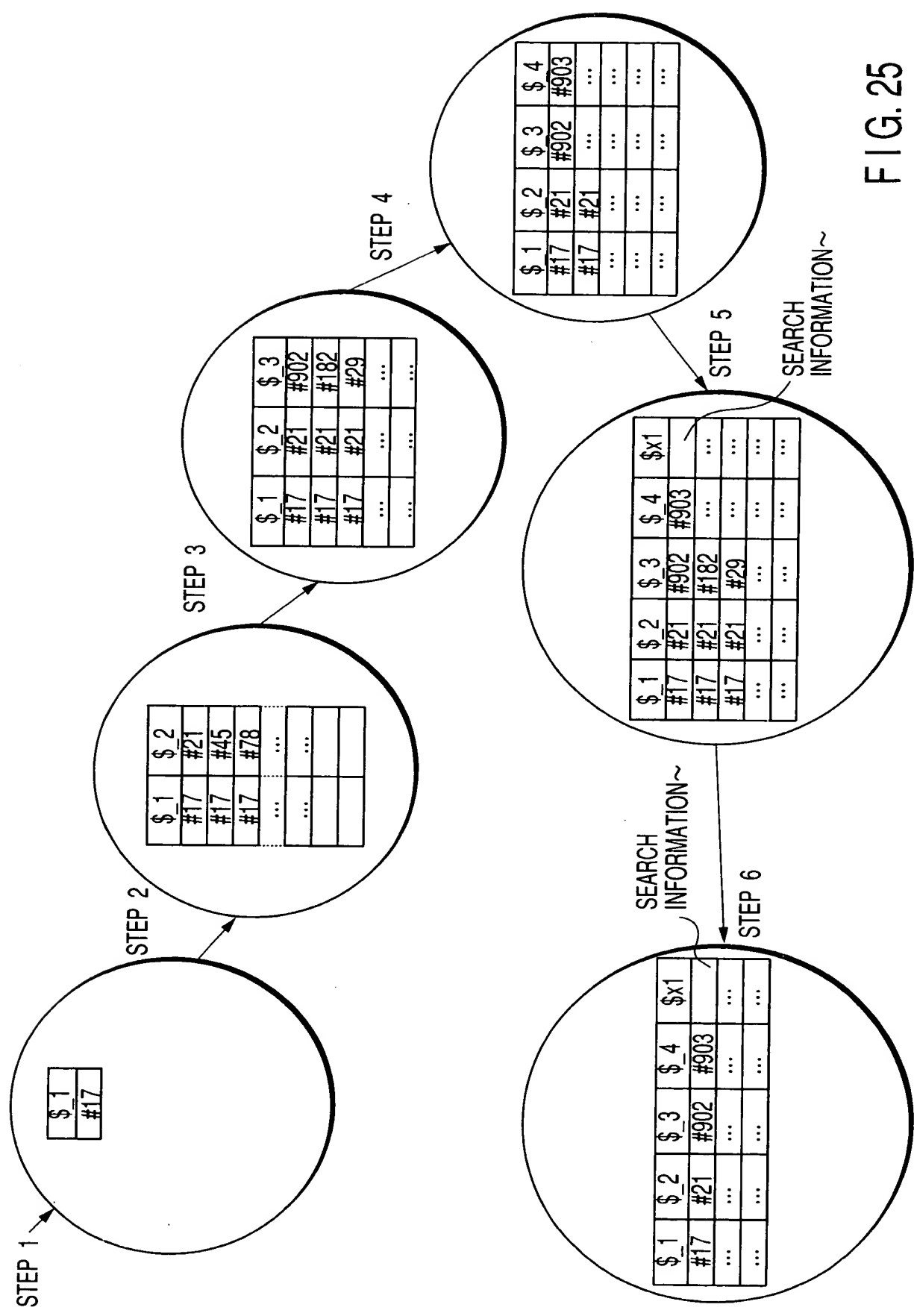


FIG. 25

